CONSTITUENTS OF *CORNUS CAPITATA*

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Leaves of *Cornus capitata* Wall. (Cornaceae) have been shown to possess antiviral (1) and semen-coagulating properties (2), while the seeds have shown the presence of alkaloids (3). Later, cornin and phlorin were isolated from leaves and twigs (4). Because the stems had not been examined, a detailed study was undertaken. This has resulted in the isolation of 19 compounds, including an anti-inflammatory agent, hentriacontane (5), and a growth promotor, triacontanol (6).

EXPERIMENTAL

GENERAL PROCEDURES.—Spectra were recorded with the following instruments: ir, Perkin-Elmer model 399B; uv, Pye Unicam model SP8-100; ^{1}H nmr, Varian 80 MHz; ms, JEOL JMS DX 300 instrument. Absorbants for tlc and cc were from British Drug House.

PLANT MATERIALS.—Stems of *C. capitata* were collected from Ranikhet, Uttar Pradesh, and were authenticated in our Botany Department where a voucher specimen has been maintained.

EXTRACTION AND ISOLATION OF COMPOUNDS.—Dried stems of *C. capitata* (3 kg) were extracted with EtOH (9×10 liters); the extract was concentrated to 200 ml, and H_2O (200 ml) was added. It was then successively extracted with *n*-hexane (7×400 ml, 26 g), $CHCl_3$ (6×400 ml, 27 g), and *n*-BuOH (4×400 ml, 32 g). Silica gel chromatography of the hexane fraction (24 g) and subsequent purification of the eluates afforded *n*-hentriacontane (5 mg), 7-hydroxycadalene (36 mg), triacontanol (47 mg), stigmastanone (5 mg), lupeol (3 mg), triacontanoic acid (60 mg), tetracosanoic acid (30 mg), sitosterol (500 mg), friedelin (10 mg), betulin (25 mg), *epi*-betulin (15 mg), betulinic acid (40 mg), *epi*-betulinic acid (25 mg), maslinic acid (50 mg), arjunolic acid (1.2 g), and sitosterol-β-D-glucoside (25 mg). The $CHCl_3$ fraction (22 g), when chromatographed over silica gel, yielded additional amounts of betulinic acid (450 mg), maslinic acid (560 mg), arjunolic acid (1.1 g), and sitosterol-β-D-glucoside (4.3 g).

The BuOH fraction (15 g), showing the presence of saponins and tannins, was hydrolyzed and extracted with $CHCl_3$ and EtOAc. The $CHCl_3$ extract (250 mg) yielded smilagenin (5 mg), phloroglucinol (30 mg), and arjunolic acid (15 mg) whereas the EtOAc extract (3 g) furnished gallic acid (600 mg). The aqueous hydrolysate showed the presence of glucose and galactose.

7-Hydroxycadalene (7), *epi*-betulin (8,9), *epi*-betulinic acid (9), and maslinic acid (10) were identified by comparison with literature data whereas all other compounds were identified by spectral (ir, ms, ^{1}H nmr) data and authentic sample (co-tlc, mmp) comparison.

Full details of the isolation and identification of the compounds are available on request to the senior author.

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